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elder brother. "If you would deign to give yourself the trouble, you might become the first mosaicist of your time; your name would efface that of Rizzo, and mine would only follow in the train of yours."

"I should be very sorry for it. By Saint Theodosius, be always the first! holy laziness! preserve me from such a grievous honor!"

"Do not utter the like blasphemy, Valerio; art is superior to all the affections."

"Whoever loves art loves glory," added Bozza, always gloomy and dismal, like a discordant note in the midst of a tender and joyous song, "whoever loves glory is ready to sacrifice everything to it."

"Not exactly!" cried Valerio; "as for myself, never will I sacrifice anything to it. Far from me self-immolation; and yet I love art, and you two are well aware of it, although I am accused of loving only wine and women. Why should I not love it, since I surrender to it the half of a life which I am naturally inclined to consecrate entirely to pleasure. Never am I so happy as when I work. When I succeed, I could skirl my cap over the great tower of St. Mark; if I fail, I am never discouraged, and the feeling of self-irritation which I experience is but a satisfaction like that which one derives from a restive horse, a turbulent sea, or a heating wine. But the approbation of another excites me no more than would a compliment from the Signors Bianchini. When Francesco, my other half, says to me, 'That is good,' I am satisfied. When my father, while looking at my archangel this morning, smiled in spite of himself, with a frown still lingering on his brow, I was happy. Now, even, that the procurator-treasurer says Dominique the Red does better than I do, so much the worse for the procurator-treasurer; I will not force my compassion to express itself in tears. Let the good people of Venice discover that I have not mixed enough red in my flesh-tints, and sufficient ochre in my drapery, who cares! If thou wast not so foolish, thou wouldst not make me laugh so much—and that would be a pity, because I laugh so heartily!"

"Happy, thrice happy indifference!" cried Francesco.

Thus chatting the time away, they approached the city. As they drew near the shore: "Before I leave you," said Valerio, "let us finish. Of what do you complain? What do you require of me? That I cease to enjoy myself? As well would it be to stop water from flowing."

"That thou divertest thyself less publicly," replied Francesco, "and that thou givest up, for a time at least, thy studio at San Filippo. All that is capable of evil interpretation. It is already asked how that prodigious quantity of arabesques thou designest, and sundry commissions to which thou givest thy time, can be reconciled with the labors required in the basilica. If I were not aware of thy indefatigable activity, I could not comprehend it myself, and if I did not see thy work progress with my own eyes, I could not believe thee or three hours of sleep—after nights of pleasure and frolic—sufficient for a workman devoted for the entire day to a painful occupation. Prevent thy numerous acquaintances, and especially those young chattering patricians, from coming to the basilica to pay thee such frequent visits. Such an

honor wounds the *amour-propre* of the Bianchini; they say that these young folks cause thee to lose thy time, that they distract thee from thy labors in order to occupy thee with useless matters; for example that hilarious brotherhood you have just organized, and which renders every tradesman in the city notorious."

"Indeed!" cried Valerio, "it is precisely for that I am in such haste to quit you this evening: I am expected to arrange the costumes. There is no such thing as falling back, and thou hast promised, upon thine honor, Francesco, to be one of the party."

"I did engage myself, on condition that the affair should not be matured until after St. Mark's day, for then I hope to have my cupola completed."

"I said so, both for your and my own sake. But thou canst imagine that two or three hundred young folks, eager for pleasure, do not readily listen to the arguments of one who is only eager for work. They swore that if we refused to be with them at once, the association would fail, and that nothing was possible without myself; and upon that they reproached me warmly, pretending that I had launched them forth; that the expenses were provided, the fête determined, and that so long a delay would afford a triumph to other companies. In short, they made so much ado, I engaged, both for thee and myself, to inaugurate the banner of the companies of the *Léopard* in a fortnight. They will make their début with a grand sport at the ring, and with a magnificent repast, where each of the brotherhood is bound to bring a beautiful young girl."

"Have you no fear that these follies may retard your labor?"

"*Vive la folie!*—But I defy it to prevent me from working, when the hour for labor comes. There is time for all things, brother!—so, I may depend upon thee?"

"Thou may'st inscribe my name, and by thy hands I give my assent; but I will not be present at the fête: I do not wish to have it said that the two Zuccati are enjoying themselves at the same time. It is important to have it known that when one plays, the other works for both."

"Dear brother!" cried Valerio, embracing him, "I will do the work of four the evening previous; thou shalt come to the fête. Go, it will be a superb fête, and is one with a noble object; a fête altogether belonging to the people, and completely fraternal. It shall not be said that patricians only have the right to amuse themselves, and that workmen exhibit nothing but monkish associations. No, no! the artisan is not reserved to do penance always! the wealthy imagine that we are made to expiate their sins. Come, Bartolomeo, thou shalt be one of them also; I am going to put thy name down, it shall not be one iota of expense to thee. If thou hast no money, I have, and I take it all upon myself. And now, good friends—to-morrow. Dearest brother, thou shalt not say I listen not to thy advice with the respect one owes to his elders. Come now—confess that thou art content with me!"

Thus speaking, Valerio jumped lightly upon the quay of the ducal palace and disappeared in the shadows of the colonnade.

(To be continued.)

## OUR BUILDING-STONES.

### NO. II.

The limestone quarries of Great Britain may be divided into three classes: limestone proper, magnesian limestones, and oolitic stones. In the first and the last, carbonate of lime is the predominant constituent, and varies from 80 to 95 per cent. But while the material is similar, the construction is very different. The oolite is an agglomeration of globules. From the resemblance which these bear, in form and size, to the roe of a fish, the mineral derives its name. In the second class, the carbonate of magnesia is combined with that of lime, in proportion usually of about 4 to 5.

A decided preference of limestones to sandstones was the decided result of the historic and scientific investigation made by the British Commissioners. Their "more general uniformity of tint, their comparatively homogeneous structure, and the facility and economy of their conversion to building purposes," are some of the reasons assigned for this preference. The strongest argument, however, must have been the unquestionable fact that the limestones have better stood the test of time. But, though this be true, on the whole, it must not be inferred that the limestones are all of them reliable. Among these, as among the sandstones, the differences, in regard to durability and other important qualities, are numerous and great. A few statements from the "Report" will make this abundantly manifest.

The oldest limestone wall named in the Report is Southwell Church, Notts, a building of the tenth century. The stone is a Dolomite, similar to that of Bolsover Moor. Nine hundred years of heat, frost, and storm, have made no impression on it. It is "in perfect condition. The mouldings and enrichments of the doorway appear as perfect as if just completed."

Among the ruins of Glastonbury Abbey, portions of the church choir and nave are still in good preservation. The material is a shelly limestone, and this part of the structure dates from the eleventh century.

At Selby, Yorkshire West Riding, there is an old church, a portion of which is Norman, of the eleventh century. The material—a grey magnesian limestone—is still "in excellent condition." But "the later portions of the building, which also are of magnesian limestone, are much decomposed and blackened." It is but just to add that these "later portions" are several hundred years old.

Byland Abbey, once a noble structure, in the North Riding of Yorkshire, was built a century later than those last-named. Its outer wall was a compact oolite. "The west front is in perfect condition, even in the dog's-teeth and other florid decorations, of the doorways, &c. This building is generally covered with lichens."

Of the same date are portions of Ketton Church, Rutlandshire. The material—a shelly oolite—well known as a stone of great durability, under the familiar name of Barnack rag. Here, too, the dog's-teeth, carved corbels, and other enrichments, are untouched by time.

In Wells Cathedral (of shelly limestone), there was considerable diversity. The

older portions, which were of the thirteenth and fourteenth centuries, are generally well preserved. The cloister and close gates, built a hundred years later, are greatly decomposed.

Knarborough Castle, a Yorkshire building, of the twelfth century, shows the power of certain winds. The magnesian limestone "is generally in very good condition, except on the south and south-western portions of the circular turrets, where the surface is much decomposed."

Pickering Castle, in Yorkshire, which once held prisoner the unfortunate Richard II.—built five hundred years ago, of oolite and siliceous grit—is yet "in fair condition." Not so that castle in Pomfret, where the poor monarch died. This was "built generally of a coarse grit, of a dark-brown color, occasionally mixed with an inferior magnesian limestone. The whole in a very decomposed state, more particularly the sandstone, in which all traces of the original surface are effaced." But fragments of magnesian limestone, of a better quality, with mouldings of the twelfth century, are still seen imbedded in the walls, and perfectly preserved.

Another instance of excellent wear is seen in St. Mary's Church, at Stamford, in Lincolnshire, a building now six hundred years old, with walls built of shelly oolite (the Barnack rag). But St. John's Church, in that town, built a hundred years later, of the same material less carefully selected, "is consequently decomposed in parts, and in laminations, according to the direction of the beds of shells."

Grantham Church (thirteenth century), oolite. The lofty tower and spire of this church is unimpaired, except at its base.

In Spofforth Castle, York West Riding, a building of the fourteenth century, the Commissioners found the coarse, red sandstone, and the half-crystalline magnesian limestone, in striking contrast. While the former has crumbled badly, the latter, used as "dressings of the windows and doors," is "in a perfect state, the mouldings and enrichments being eminently sharp and beautiful."

k. The beautiful cathedral of Salisbury, with its six hundred years of history, attests the excellence of its siliceiferous limestone, from the quarries of Chilmark. The west front alone shows some marks of decomposition. For its preservation, the venerable structure is indebted, probably not a little, to the lichens with which it is covered.

Barlegh House is another example of the durability of the Barnack rag, where it may be seen unscathed by the storms of four hundred years.

St. Peter's Church, at Dorchester, a fifteenth-century structure, was built of laminated oolite, and of shelly limestone; the latter being used for the pinnacles, parapets, and dressings. The whole is in a state of decay.

That world-renowned building, Westminster Abbey, dates from the thirteenth century. Several kinds of stone were used in its construction. Many of them have so far decayed as to render restoration necessary. Then, as now among us, the good looks, the softness, and, perhaps, the cheapness of the French stone, from Caen, led to its use in a part of the Abbey. It proved to be quite untrustworthy, and has been replaced, by other material. But,

strange to tell, the Combe Down Bathstone, with which Henry the Seventh's chapel was restored, had not been exposed twenty years, before it exhibited evidence of decomposition.

Hemingborough Church and Huddlestone Hall, both in Yorkshire, and both of the fifteenth century, proclaim the enduring virtues of the crystalline magnesian limestone.

The old church of Doncaster, in the West Riding, four-hundred years old, though built of magnesian limestone, was not so fortunate in the quality. A general repair has been found necessary.

Of the Abbey Church, Bath, (1576) oolite; we are told, that "the tower is in fine condition. The body of the Church, in the upper part of the south and west sides, is much decomposed. The lower parts, formerly in contact with buildings, are in a more perfect state; the reliefs in the west front of Jacob's ladder are, in parts, nearly effaced." The circus in the same city, built of oolite, and only a hundred years old, shows decomposition where most exposed upon the west and south.

"Bolsover Castle, Derbyshire, (1629) mostly in ruins. Of magnesian limestone of several varieties, and of a calcareous, fine-grained sandstone. The dressings, which are generally of sandstone, are much decomposed, in some instances to the entire obliteration of the mouldings and other decorations, and to the destruction of the form of the columns, rustications, &c. Most of the string courses, a portion of the window dressings, and the ashler, which are of magnesian limestone, are generally in excellent condition."

"Many buildings constructed of a material similar to the oolite of Ancaster, such as Newark and Grantham churches, and other edifices in various parts of Lincolnshire, have scarcely yielded to the effects of atmospheric influences. Windrush Church, built of an oolite from a neighboring quarry, is in excellent condition, while the Abbey church of Bath, constructed of the oolite from the vicinity of that city, has suffered much from decomposition; as is also the case with the cathedral, and the churches of St. Nicholas and St. Michael in Gloucester, erected of a stone from the oolite rocks of the neighborhood."

"The churches of Stamford, Ketton, Colley, Weston, Kettering, and other places in that part of the country, attest the durability of the shelly oolite termed Barnack Rag; with the exception of those portions of some of them for which the stone has been ill-selected. The excellent condition of those parts which remain of Glastonbury Abbey, shows the value of a shelly limestone similar to that of Douling, while the stone employed in Wells cathedral, apparently of the same kind, and not selected with equal care, is in parts decomposed."

"In the public buildings of Oxford, we have a marked instance both of decomposition and durability in the materials employed; for whilst a shelly oolite, similar to that of Taynton, which is employed in the more ancient parts of the cathedral, in Merton College Chapel, &c., and commonly for the pinths, string courses, and exposed portions of the other edifices in that city, is generally in a good state of preservation—a calcareous stone from Heddington, employed in nearly the whole of the colleges,

churches, and other public buildings, is in such a deplorable state of decay as, in some instances, to have caused all traces of architectural decoration to disappear, and the ashler itself to be in many places deeply disintegrated."

The Report sums up as follows: "Judging, therefore, from the evidence afforded by buildings of various dates, there would appear to be many varieties of sandstone and limestone employed for building purposes, which successfully resist the destructive effects of atmospheric influences." The quarries thought most deserving of this praise are then enumerated—embracing the following varieties: sandstone, calciferous sandstone, magnesian-calcareous sandstone; limestone; shelly limestone; siliceiferous limestone; oolite, shelly oolite; magnesian limestone, and crystalline magnesian limestone.

It will be remembered that the primary and immediate object of this investigation was the selection of a durable and, in other respects, suitable material for the Parliament House—the mightiest structure of our day—intended, as was most fit, not only to accommodate the government of a great nation, but to be also a type and representative of its wealth, and power, and taste. The stone actually recommended, and used for the edifice, was the crystalline-magnesian limestone, or granular Dolomite of Bolsover Moor, near Chesterfield, in Derbyshire. To this they were led not only by its well-proved durability, but also by its uniform structure, ease of working, and "advantage of color." In this connection we give one extract more:

"We may here remark, that, as far as our observations extend, in proportion as the stone employed in magnesian limestone buildings is crystalline, so does it appear to have resisted the decomposing effects of the atmosphere; a conclusion in accordance with the opinion of Professor Daniell, who has stated to us, that, from the results of experiments, he is of opinion 'the nearer the magnesian limestones approach to equivalent proportions of carbonate of lime and carbonate of magnesia, the more crystalline and better they are in every respect.'"

Such are some of the facts brought to our knowledge by the explorations of the committee. We present them as full of instruction and warning. They show, as nothing else would, the results which have followed, and which must always follow, from the action of ignorance and carelessness in the selection of building-stone. It is a pregnant page of stone history and of human experience, spread open for our benefit, and if we are wise we shall give heed to it. We see not how any one, who has marked the course of things amongst us, can contemplate the developments of time, and of the elements, in our mother-land, without a deep conviction that this matter calls for far more of scrutiny and of care than it has hitherto received. We cannot but hope that the reproduction of these important facts will aid in awakening a livelier and a more enlightened interest in the whole matter of our building-stones. Hereafter, we propose to offer some inferences and considerations especially applicable to our own country.